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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OFFICIAL

Inventors:	Zhimin He et al.		
Serial No.:	09/894,480	Examiner:	A. Castro
Filed:	June 27, 2001	Group Art Unit:	2653
Title:	Flexural Pivot for Rotary Disc Drive Actuator		
Docket No.:	STL9799		

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NOV 04 2003

This appeal is filed in response to the final Office action mailed June 19, 2002 and the Advisory action mailed August 29, 2003.

(1) *Real party in interest*

The real party in interest is Seagate Technology LLC.

(2) *Related appeals and interferences*

There are no related appeals or interferences.

(3) *Status of Claims*

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Claims 1, 3-8, 10-15, 17, 19 and 20 stand rejected and are hereby appealed.

Claims 2 and 9 stand objected to as including allowable subject matter while being dependent upon a rejected base claim.

(4) *Status of Amendments after Final*

No amendments were filed after final. A request for reconsideration was filed August 19, 2003 but was not deemed persuasive by the Office.

(5) *Summary of Invention*

As described in the specification between page 5, line 21 and page 7, line 28, with reference to Figures 2-9, a first contemplated embodiment of the present invention takes the form of a disc drive (such as 10) comprising a housing (such as 32) having a first component (such as 62), an actuator (such as 24) having a wall (such as 56) defining a cavity (such as 44) and a pivot (such as 46) in the cavity (such as 44). The pivot comprises a first member (such as 48) which includes at least one external surface (such as 54) and is coupled to the wall (such as 56), a second member (such as 58) mounted to the first housing component (such as 62) and at least two leaves (such as 64,65), each leaf joining one of the external surfaces (such as 50) to the second member (such as 58), wherein the leaves (such as 64,65) are transversely disposed at an angle to one another such that the actuator (such as 24) is pivotable with respect to the housing (such as 10) about an axis (such as 26).

As described in the specification between page 5, line 21 and page 7, line 28, with reference to Figures 2-9, a second contemplated embodiment of the present invention takes the form of an actuator (such as 24) configured for rotational movement about an axis (such as 26) comprising an actuator body (such as 22) having a wall (such as 56) defining a cavity (such as 44) and a pivot (such as 46) in the cavity. The pivot (such as 46) comprises a first member (such as 48) having at least one external surface (such as 50) and is coupled to the wall (such as 56), a second member (such as 58) configured to be mounted to a first disc drive housing component (such as 62) and at least two leaves (such as 64,66) each leaf joining one of the external surfaces (such as 50) to the second member (such as 58), wherein the leaves (such as 64,66) are transversely disposed at an angle to one another such that the actuator (such as 24) is configured to be pivotable with respect to the disc drive housing (such as 10) about the axis (such as 26).

(6) *Issues*

The issues are as follows:

(1) Whether claims 1, 3, 5, 6, 8, 10, 12, 13, 15, 17, 19 and 20 are unpatentable under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,205,005 to Heath (hereinafter "Heath").

(2) Whether claims 4 and 11 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Heath in view U.S. Patent 6,404,727 to Rao (hereinafter "Rao") and U.S. Patent 4,478,532 to Puro (hereinafter "Puro").

(3) Whether claims 5, 6, 12, 13 and 17 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Heath in view U.S. Patent 5,267,110 to Otteson et al. (hereinafter "Otteson").

(4) Whether claims 7 and 14 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Heath in view U.S. Patent 6,424,503 to Chin et al. (hereinafter "Chin").

(7) *Grouping of Claims*

As to Issue (1), claims 1, 3, 5, 6, 8, 10, 12, 13, 15, 17, 19 and 20 do not stand or fall together, for reasons set forth below in the "Argument" section of this Brief.

As to Issue (2), claims 4 and 11 do not stand or fall together, for reasons set forth below in the "Argument" section of this Brief.

As to Issue (3), claims 5, 6, 12, 13 and 17 do not stand or fall together, for reasons set forth below in the "Argument" section of this Brief.

As to Issue (4), claims 7 and 14 do not stand or fall together, for reasons set forth below in the "Argument" section of this Brief.

(8) *Argument*

Issue (1):

Claims 1, 3, 5, 6, 8, 10, 12, 13, 15, 17, 19 and 20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Heath.

Independent claim 1 recites, among other limitations, "at least two leaves . . .

transversely disposed at an angle to one another." The final Office action states on page 3 that Heath's elements 7, 21 are transversely disposed to one another. However, the broadest interpretation of the term "transverse" requires that the elements cross one another. See, e.g., The American Heritage College Dictionary 1438 (3d ed. 1993) ("Situated or lying across; crosswise"). Heath's elements 7, 21 clearly do not cross one another. For at least this reason, it should be clear that claim 1 is not anticipated by Heath; as such, reversal of the rejection as to claim 1 is respectfully requested.

Claims 3, 5 and 6 depend from claim 1 and are similarly allowable. However, some of these claims are allowable for additional reasons.

Regarding claim 5, the Examiner states that it is "inherent" that Heath's pivot axis and actuator center of mass are coincident. The Office continues to demonstrate a clear misunderstanding of inherency. The Examiner seems to be suggesting that this feature is desirable and thus should be inherent. While the feature is in fact desirable, as described in the present specification, it certainly cannot be described as "inherent" and reversal of the rejection of claim 5 is respectfully requested.

Regarding claim 6, it should be clear that the external surfaces contacted by Heath's element 31 are not inclined toward the actuator's axis of rotation. Reversal of the rejection of claim 6 is respectfully requested.

Like claim 1, independent claim 8 recites, among other limitations, "at least two leaves . . . transversely disposed at an angle to one another." For the same reasons as those set forth above with respect to the rejection of claim 1, it should be clear that claim 8 is not anticipated by Heath; as such, reversal of the rejection as to claim 8 is respectfully requested.

Claims 10, 12 and 13 depend from claim 8 and are similarly allowable, and the rejection of claim 12 is respectfully traversed for the same reasons as those set forth above with respect to claim 5. The rejection of claim 13 is traversed for the same reasons as those set forth above with respect to claim 6.

Claim 15 recites "means for pivotably coupling the actuator to the base." This claim thus invokes 35 U.S.C. § 112, sixth paragraph. Whatever the result may have been under prior PTO practice, the PTO must construe functional limitations in accordance with the corresponding structure disclosed in the specification when examining patents. In re Donaldson, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994) (en banc). Appellant's corresponding structure at the least includes first and second flexible leaves transversely disposed with respect to one another within the actuator cavity. For reasons set forth above with respect to the rejection of claim 1, it should be clear that Heath does not disclose this feature. The Office has yet to properly analyze claim 15 in the manner required by law. As such, claim 15 is not anticipated by the prior art, and withdrawal of the rejection under § 102(b) is respectfully requested, as is allowance of claim 15.

Claims 17, 19 and 20 depend from claim 15 and are similarly allowable.

Issue (2):

Claims 4 and 11 were rejected as being obvious over Heath in view of U.S. Patent 6,404,727 to Rao (hereinafter "Rao") and U.S. Patent 4,478,532 to Puro (hereinafter "Puro").

Claims 4 and 11 are allowable by virtue of their dependence from claims 1 and 8, which are allowable for reasons set forth above. However, these claims are allowable for additional reasons.

Claims 4 and 8 recite "washers secured to each of the leaves." As acknowledged by the Office on page 4 of the final rejection, Heath does not disclose a pair of washers secured to each leaf. The Office goes on to suggest that Rao discloses screws, and Puro discloses that washers are useful with screws, so it would have been obvious to apply both references to modify Heath to "provide a snug and secure fit between the screw and the leaves." But Heath does not disclose screws. In a breathtaking display of hindsight reasoning, the Office has applied Rao to Heath for the sole purpose of creating a "rationale" for taking the washers from Puro and attaching them to Heath's device. Even the most cursory examination of Heath reveals that spring 21 is held in

place by a compression force upon protrusions 22 and 23. To apply screws and washers to this element would destroy Heath's device. In view of the unsuitability of the Office's proposed modification as well as the excessive hindsight necessary to produce it, this rejection simply cannot be maintained. For at least these reasons, reversal of the rejection and allowance of claims 4 and 8 are respectfully requested.

Issue (3):

Claims 5, 6, 12, 13 and 17 were rejected as being obvious over Heath as previously applied to claims 5, 6, 12 and 13 and further in view of U.S. Patent 5,267,110 to Otteson et al. (hereinafter "Otteson").

Notwithstanding the questionable practice of re-rejecting claims "in view of" an application of a reference to reject *those same claims*, claims 5 and 6 depend from allowable claim 1, claims 12 and 13 depend from allowable claim 8 and claim 17 depends from allowable claim 15. Claims 5, 6, 12, 13 and 17 are allowable for at least these reasons.

Issue (4):

Claims 7 and 14 were rejected as being obvious over Heath in view of U.S. Patent 6,424,503 to Chin et al. (hereinafter "Chin").

Claims 7 and 14 depend from claims 1 and 8, respectively, and are allowable for at least this reason.

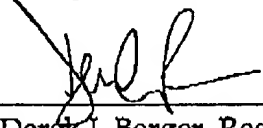
Conclusion:

Appellant maintains that present claims identify the features and benefits of the present invention clearly and concisely. The present invention as claimed is not taught or suggested by the prior art of record or any combination thereof. Therefore, it is respectfully submitted that the appealed claims are in condition for allowance, and favorable action is respectfully requested.

Respectfully submitted,

Seagate Technology LLC
(Assignee of the Entire Interest)

November 4, 2003
Date


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Appendix of Appealed Claims

1. A disc drive comprising:
 - a housing having a first component;
 - an actuator having a cavity; and
 - a pivot comprising:
 - a first member positioned within the cavity and coupled to the actuator,
the first member having at least one external surface;
 - a second member mounted to the first housing component; and
 - at least two leaves, each leaf joining one of the external surfaces to the
second member, wherein the leaves are transversely disposed at an
angle to one another such that the actuator is pivotable with respect
to the housing about an axis.
2. The disc drive of claim 1 in which the cavity further comprises:
 - two end walls defining a recess in slidable engagement with the second member,
the two end walls serving to limit rotation of the actuator by coming into
abutment with the second member.
3. The disc drive of claim 1 in which the cavity further comprises:
 - a first recess shaped to locate the first member.
4. The disc drive of claim 1 further comprising:
 - a pair of washers secured to each one of the leaves, the washers of each pair
being spaced apart by substantially a same distance.
5. The disc drive of claim 1 in which the pivot has a center of rotation generally
coincident with a center of mass of the actuator.

6. The disc drive of claim 5 in which each of the external surfaces is inclined towards the center of rotation.
7. The disc drive of claim 1, the housing further comprising:
a second component, the second member being coupled to the second housing component.
8. An actuator configured for rotational movement about an axis, comprising:
an actuator body having a cavity; and
a pivot comprising:
a first member positioned within the cavity and coupled to the actuator;
a second member positioned within the cavity and configured to be mounted to a housing; and
at least two leaves, each leaf joining the first member to the second member, wherein the leaves are transversely disposed at an angle to one another such that the actuator is configured to be pivotable with respect to the housing about the axis.
9. The actuator of claim 8 in which the cavity further comprises:
two end walls defining a recess in slidable engagement with the second member, the two end walls serving to limit rotation of the actuator by coming into abutment with the second member.
10. The actuator of claim 8 in which the cavity further comprises:
a first recess shaped to locate the first member.
11. The actuator of claim 8 further comprising:
two washers secured to each one of the leaves, the two washers being spaced apart by a same distance for all the leaves.

12. The actuator of claim 8 in which the pivot includes a center of rotation generally coincident with a center of mass of the actuator.
13. The actuator of claim 12 in which each of the external surfaces is inclined towards the center of rotation.
14. The actuator of claim 8 in which the second member is configured to be mounted to first and second housing components.
15. A disc drive comprising:
 - a base;
 - an actuator configured for rotation relative to the base about an axis of rotation;
 - and
 - means for pivotably coupling the actuator to the base.
17. The disc drive of claim 15, in which the coupling means includes a center of rotation generally coincidental with a center of mass of the actuator.
19. The disc drive of claim 15 in which the coupling means comprises:
 - a mounting element fixed to the base.
20. The disc drive of claim 15 in which the coupling means comprises:
 - a mounting element fixed to the actuator within the cavity.

PTO/SB/21 (08-03)

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	First Named Inventor	Zhimin He	
	Art Unit	2653	
	Examiner Name	A. Castro	
Total Number of Pages in This Submission	33	Attorney Docket Number	STL9799

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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Date	November 4, 2003

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